Journal of Low Temperature Physics 2016 vol.185 N5-6, pages 577-582

Coherence Times of Large-Spin Ensemble in Transient Regime

Baibekov E.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2016, Springer Science+Business Media New York.Rabi oscillations in the ensemble of weakly interacting electron or nuclear spins in solids are theoretically studied. A statistical theory which allows for calculation of the coherence times in the transient regime is presented in the general case of arbitrary spin value ≥ 1/2. Analytical expressions of the coherence times depending on the spin, temperature, spin concentration, and the Rabi frequency are obtained.

http://dx.doi.org/10.1007/s10909-016-1615-8

Keywords

Magnetic resonance, Quantum computation, Rabi oscillations